



# The Titan™ Pole Product Family – A New Generation Lighting & Distribution Pole White Paper

## **Intended Audience-Who needs to know**

This paper is designed for those who are interested in more detailed information on CMT Worldwide's (Worldwide) new Titan™ Pole Product Family. Engineers, Specifiers, and other who have a requirement to understand the technical capabilities and applications the Titan™ Poles solves and will find this information useful.

## **Introduction-Why Titan™ Poles**

Worldwide has introduced our new Titan™ Pole Product Family for Lighting and Utility Distribution Pole Applications. Over the past 25 years, the Lighting and Utility Pole markets have asked pole manufacturers to develop alternative products to meet their changing demands. This paper details what applications required alternative material product development and why the market required these new developments. A brief development history is explored which defines the materials, their characteristics, capabilities and the engineering design specifications. The product markets served today and in the future. Currently available sizes and strengths are discussed, in addition to what new products are in development.

## **Market Requirements - Why were Titan™ Poles Created**

The Utility Pole industry is experiencing a significant shift toward the use of alternative material for any type installation. This industry has historically been dominated by treated wood products, but is now moving to a broad range of alternative materials. This trend has emerged over the past 20-25 years.

The Lighting & Utility Distribution Pole industry is moving toward alternative materials, such as reinforced spun concrete, thin-wall steel and fiberglass/resin products. Environmental, regulatory, and maintenance pressures are some of the driving forces and the pace is accelerating. Alternative materials have captured a significant share of the market, approaching 40%. Indications are that over the next 5-10 years the trend will dramatically increase. Major wood pole producers have told Worldwide that they expect wood will no longer be the material of choice in the utility distribution market within 20 years.

We have identified three forces that are helping shape the Lighting & Utility Pole industry:

- 1 Customers are increasing the engineering demands on pole providers;
- 2 Economically viable wood preservation methods are losing ground to environmental interests; and

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- 3 Wood producers are limited in their ability to respond to changing markets.

#### Customer Engineering Demands.

The customers for Lighting & Utility poles include the utility industry, municipalities, real estate developers and retail consumers. Each sector is subject to different pressures but all are increasing the engineering requirements expected of pole providers. Wood pole providers have reported increased requests for alternative materials to satisfy these changing demands. Developers and retail consumers are often driven by fear or liability concerns to provide ample lighting and security for their developments, while protecting from random reflected light. Satellite images of virtually any segment of the United States over the last 40 years show an incredible increase in ambient ground light. Developers and retail consumers place decorative and functional requirements on light pole providers that the wood pole manufacturers have little ability to attain.

#### Environmental Concerns

Environmental regulations spurred by interest groups and lobbyists are cutting off economically viable choices for wood preservatives. Direct burial wood poles are often noted for the “dead ring” at the ground line as preservatives leach out into the environment. Yet, untreated or inadequately treated wood will last an unacceptably short time, even in the least hostile environments. Recent regulations, effective in January 2004, ban the use of the preservative chemicals used in treating playground materials or consumer outdoor furniture. Regulatory pressures like these cause wood pole producers to change manufacturing methods and preservatives limiting their flexibility to change.

#### Wood Producers Have Limited Ability To Change

We believe that wood producer’s market pressures leave little room to respond to market share losses. Heavy capital investment requirements, over capacity and raw materials prices limit the flexibility for producers to effectively react to these changing market conditions.

The shift from wood to alternative materials is gaining momentum. Over the last 25 years, the alternative materials producers have fought industry resistance and are winning market share for alternative materials in all pole applications. Worldwide developed the Titan™ Pole product family to meet this market shift.

#### **Titan™ Poles solve the alternative materials requirements**

Worldwide’s new Titan™ Product Family, the next generation Lighting & Utility Distribution Poles, deliver a new level of performance and economy to the industry. The Titan™ Pole Products are designed to meet your lighting & distribution requirements. This new product is a result of 7 years of development, leveraging 60 plus years delivering and servicing wood pole customers, plus our experience supplying FRC poles to many Lighting & Distribution customers.

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The reason for introducing this new product line is that our customers need a permanent alternative material pole solution with the following characteristics.

1. Engineered for specific heights and strength applications.
2. Easier to install and handle than concrete, steel and wood poles.
3. An environmentally friendly pole.
4. Less conductive than steel, aluminum or wood.
5. Meets current accepted design specifications.
6. A hollow core to accommodate current and planned telecom, wireless, security and fiber access.
7. Poles with a variety of colors and finishes.

These features are built into the Titan™ Pole design specifications to deliver long life, excellent visual appearance and the performance demanded by our customers.

Worldwide designed and tested the Titan™ Poles to meet all current NESC, ANSI, ASTM, and AASHTO specifications and requirements. The Titan™ Pole Products are also patented.

The Titan™ pole products are constructed of high strength reinforced lightweight concrete, Worldwide's patented lightweight reinforced concrete composite. Worldwide's composite provides the strength of reinforced concrete, yet contains no organic material or ferrous metals. These characteristics make the products ideally suited to today's sensitive environment.

### **What are Titan™ Poles made of & why**

Titan™ Poles are manufactured from specially developed high strength concrete designed to meet the product demands required by the new marketplace. Our composite material, an inorganic reinforced concrete composite, is a patented material that for its weight provides stronger, lighter and more durable lighting poles, utility poles and other poles better than concrete or steel. The material has a high strength-to-weight ratio, high torsional rigidity, is non-corroding in a variety of environmental conditions, and is available in a variety of colors and finishes. In our manufacturing process the material acts as binding agent and provides compressive strength. In fact, in many applications it strengthens with age.

Titan™ Poles are manufactured using a breakthrough proprietary technology allowing Worldwide to maximize the inherent benefits of our raw materials. This results in uniform strength the entire pole length, thus we can manufacture a traditional Class 3 pole that weighs less than 50% of a comparable wood pole and yet achieves required stress break points and deflection within current specifications. Worldwide's process has other attractive manufacturing benefits such as reduced waste, simple pole movement from production to shipping and a small manufacturing footprint. A complete discussion of our winding process and a visit to our facilities is available upon request.

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Composite Materials Technology is, today, a leading producer of composite lighting & utility poles. Our composite products are categorized as follows:

1. Lighting Standards, ranging in size from 10 feet to 35 feet.
2. Distribution Utility poles to 55 feet.

**Sample Available Specifications, please see web site for additional sizes and strengths.**

Titan™ Poles are available today in the following sizes and configurations

Part Number	Pole Description	Max Luminaire (LB)	Mounting Type
UTB16-D-50	Direct Burial 16'	50	Tenon
UTB18-D-50	Direct Burial 18'	50	Tenon
UTB20-D-50	Direct Burial 20'	50	Tenon
UTB24-D-50	Direct Burial 24'	50	Tenon
UTB25-D-50	Direct Burial 25'	50	Tenon
USB18-D-50	Direct Burial 18'	50	Side Mount
USB20-D-50	Direct Burial 18'	50	Side Mount
USB24-D-50	Direct Burial 18'	50	Side Mount
USB25-D-50	Direct Burial 18'	50	Side Mount
USB24-K-200	Direct Burial 24'	200	Side Mount
USB25-K-200	Direct Burial 24'	200	Side Mount

- EPA and wind loading characteristics vary by product, installation location and the current accepted Wind map for individual locations.
- Part numbering and descriptions describe Tenon sizes, side mount configurations, Anti-Rotation requirements, Name Plates, etc.
- Please use these specifications as guidelines, contact your local representative or our website for exact configuration and pricing.

Worldwide continues to add new sizes, features and capabilities to our Titan™ Product Family.

### Summary & Conclusions

CMT Worldwide is excited to introduce the Titan™ Pole Product line to the Lighting & Distribution Markets. These products meet a strong market demand for engineered pole products designed to meet evolving installation challenges, requirements and concerns. Composite Materials history insures our customers of our commitment to excellent, innovative products, that will meet their requirements today an in the future.

### Contact for more information:

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